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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,339	01/15/2002	Kirk William Baldwin	Baldwin5-7-29-12-2-1-36-3	7068

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Glen E. Books, Esq.
Lowenstein Sandler
65 Livingston Avenue
Roseland, NJ 07068

EXAMINER

STAHL, MICHAEL J

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/047,339

Applicant(s)

BALDWIN ET AL.

Examiner

Mike Stahl

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-11 is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☒ Claim(s) 6-8, 12 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

This office action is in response to the amendment filed July 22, 2003. The changes to the claims have been entered. Claims 1-13 are pending.

Claim Objections

Newly added claims 12 and 13 are objected to because they are not consistent with original claims 7 and 8. In the last office action, it was stated that claims 6-8 would be allowable if rewritten in independent form including the limitations of the parent claim and any intervening claims. Applicant has submitted claim 11 as original claim 6 rewritten in independent form. However, claims 12 and 13 are written as dependent from claim 11, whereas corresponding original claims 7 and 8 did not depend from original claim 6. The altered dependency also makes claims 12 and 13 inconsistent with the original disclosure, for example, claim 12 recites that the tube includes a resistive material and the heater includes the resistive material of the tube while parent claim 11 recites that the heater includes a plurality of angularly spaced resistive coatings. It is not evident from the original disclosure that these alternative heater embodiments could be used simultaneously in a single device. Applicant is therefore required to either cancel claims 12 and 13 or rewrite them in independent form including the limitations of either original claim 1 or amended claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okayama (US 6215922, cited in the last office action).

Okayama discloses a thermally tunable optical fiber device (fig. 2) comprising a length of fiber 32 including the thermally tunable device, and a microcapillary heater circumferentially surrounding the device, the heater including an unslotted microcapillary tube 34 and an electrically resistive heater 36 formed thereon (col. 10 lines 13-24). Okayama does not state the outer diameter of the microcapillary tube 34. However, it would have been obvious to a person having ordinary skill in the art to choose an appropriate limit on the outer diameter of the capillary tube for at least the following reasons: 1) A tube having an excessive outer diameter would offer less efficient heat transfer to the fiber (because of the extra air in the space between the tube and the fiber, if the tube wall is thin, or because of the extra thermal mass of the tube material, if the tube wall is thick); and 2) A tube of larger outer diameter would occupy more space thereby reducing the number of complete thermally tunable devices that could be included in a given package or array. It is further noted that 2 mm is given in the specification as an exemplary limit for the outer diameter and is not described as yielding unexpected benefits.

As to claim 2, the fiber device is a fiber grating. As to claims 3 and 4, Okayama does not characterize the gratings as Bragg gratings or as long period gratings. However, it would have been apparent to a person of ordinary skill in the art that the capillary tube tuner taught by Okayama could be advantageously used with these specialized types of fiber gratings.

As to claim 5, the heater **36** is described as being wound around the capillary tube **34**. It would have been obvious to a skilled person to alternatively apply the heater as a resistive coating on the tube **34** since this would provide for a more uniform distribution of heat and would avoid a wire-winding operation.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Response to Arguments

Applicant's remarks related to the previously applied Chamberlain et al. reference in view of the amendment to claim 1 are persuasive. Accordingly the previous rejections under Chamberlain have been withdrawn.

Allowable Subject Matter

Claims 9 and 10 remain allowed as indicated in the last office action. Newly added claim 11 is allowed because it represents original claim 6 rewritten in independent form. Newly added claims 12 and 13 would be allowable if amended in the manner suggested above under "Claim Objections".

Claims 6-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. As to claim 6, Okayama does not disclose or suggest providing the heater as a plurality of resistive coatings which are angularly spaced apart. As to claim 7, Okayama does not teach or suggest making the capillary tube of electrically resistive material and using the tube itself as an electrically resistive heater. As to claim 8, Okayama does not teach or suggest using a capillary heater in addition to a heater directly deposited on the fiber.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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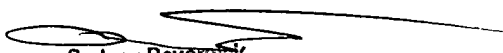
however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication should be directed to Mike Stahl at (703) 305-1520. Official communications eligible for submission by facsimile may be faxed to (703) 872-9318 (before final) or (703) 872-9319 (after final). Inquiries of a general or clerical nature (e.g., a request for a missing form or paper, etc.) should be directed to the Technology Center 2800 receptionist at (703) 308-0956 or to the technical support staff supervisor at (703) 308-3072.

MJS

Michael J. Stahl
Patent Examiner
Art Unit 2874

October 16, 2003


Rodney Bovernick
Supervisory Patent Examiner
Technology Center 2800